Air Quality

Affected Environment

Climate

Eastern Washington has an arid to semiarid climate. Average daily temperatures and annual average precipitation in eastern Washington vary moderately (see Table 3-6). Spokane is generally cooler than Grand Coulee. Temperature varies with altitude, with higher locations being cooler. The land gradually rises from the Columbia River in a northerly and easterly direction to the Rocky Mountains east of Spokane, with a few rolling hills in-between. The area between Wilbur and Davenport is on a rolling hill, which exposes the area to prevailing seasonal winds, causing more extreme temperatures than in Spokane. Most winds in eastern Washington are from the north during the fall and winter, and from the south and southwest during spring and summer.

The Cascade Mountains cast a rain shadow over part of eastern Washington. Annual average precipitation varies from about 11 inches per year at Grand Coulee Dam to 17 inches per year at Spokane.

Table 3-6. Average Temperatures and Precipitation in Eastern Washington

City	Average Daily Temperatures (degrees F)	Annual Average Precipitation (inches)
Grand Coulee	49.15	10.66
Wilbur	46.8	12.08
Davenport	46.3	16.06
Spokane	47.15	17.19

Airshed

Portions of the Spokane area have been designated as ***non-attainment*** areas for ***particulate matter*** less than 10 microns in diameter (***PM-10***) and for carbon monoxide because the area has exceeded National Ambient Air Quality Standards for these pollutants on a persistent basis. The eastern part of the corridor between approximately the Spokane River and Bell Substation are located in these non-attainment areas. The corridor passes through about 6 miles of the non-attainment area for each of these pollutants.

Environmental Consequences

Impact Definitions

A **high** impact would create one or more of these outcomes:

- Create an effect that could not be mitigated.
- Cause a widespread reduction in air quality.
- Create a probable risk to human health or safety.

A **moderate** impact would create one or more of these outcomes:

- Create an effect that could be partially mitigated.
- Cause a localized reduction in air quality.
- Create a possible, but unlikely risk to human health or safety.

A **low** impact would create one or more of these results:

- Create an effect that could be largely mitigated.
- Reduced air quality would be confined to the site of the action.
- Create insignificant or very unlikely health and safety risks.

Impacts

Transmission line construction is scheduled to begin in January 2003 and be completed in November 2004. Construction activities would affect air quality on a short-term basis. Construction activity, including line removal, would take place over two construction seasons. Depending upon how construction is sequenced, construction activities in any given area would take place over a month's duration or less. Dust from construction activities, particularly access road construction, and from traffic on unpaved roads would be emitted into the atmosphere. Water trucks would be used to control dust and would reduce air quality impacts to a low impact.

Heavy equipment and vehicles emit pollutants such as carbon monoxide, carbon dioxide, sulfur oxides, particulates, oxides of nitrogen and volatile organic hydrocarbons. Typical construction equipment would consist of about twenty vehicles (pickups and vans), three bucket trucks, one conductor reel machine, three large excavators, one line tensioner, and one helicopter. Vehicle and equipment emissions would be relatively small and comparable to current conditions in agricultural areas. Impacts are expected to be short term, with a low level of impact on air quality. Short-term emissions from construction are exempt from air quality permitting requirements.

Trees and tall brush would be cleared in the existing right-of-way to accommodate height restrictions of the new 500-kV line. It is not anticipated that a large number of trees would need to be cleared because most of the route was cleared earlier for the existing 115-kV line. Trees would be cut outside of the right-of-way that are identified as "danger trees" or trees that, because of their height and condition, may pose a threat to the adjacent line. About 97 acres would be cleared under a worst-case scenario. Marketable timber from cleared sections would be sold and the remaining slash, branches and treetops would either be left lopped and scattered, piled, or chipped, or would be taken off-site. Burning would not be carried out and there would be no pollutants from wood burning.

The transmission lines themselves cause limited air emissions. The high electric field strength of 500-kV transmission lines causes a breakdown of air at the surface of the conductors called corona. Corona has a popping sound that is most easily heard during rainstorms (see **Noise** Section). When corona occurs, small amounts of ozone and oxides of nitrogen are released. These substances are released in such small quantities that they are generally too small to be measured or to have any significant effect on humans, animals or plants.

Environmental Consequences of the Alternative Action

Air quality impacts would be the same for the alternative that would have more double-circuit line.

Cumulative Impacts

Eastern Washington, including the Spokane area, experiences air quality pollution problems from particulates associated with burning of grass seed fields, dust from farm fields, and wildfires. Studies are currently underway to determine the extent of the problem and what actions can be taken to lessen impacts. The Washington Department of Ecology is implementing restrictions on burning of grass seed fields. To the extent that these restrictions are successful, cumulative impacts at certain times of the year would be less than existing conditions. The proposed action would contribute to prevailing air quality pollution problems on a short-term basis during construction.

Certain manufactured and natural gases absorb and re-radiate infrared radiation preventing heat loss to space. These gases are known as greenhouse gases. An increase in the concentration of greenhouse gases since pre-industrial times is believed by many to be the cause of an apparent warming trend on earth during the last century.

For this project there would be no to low impacts on global warming (see **Global Warming** in the **Environmental Consultation, Review and Permit Requirements** Section).

Mitigation

- Because work in non-attainment areas is anticipated to occur during the worst air quality seasons, water trucks would be used to control dust during construction operations.
- All on-road vehicles would comply with Washington State tailpipe emission standards.
- On-road diesel vehicles will use low sulfur fuel.
- All vehicle engines will be in good operating condition to minimize exhaust emissions.
- Wood debris will be lopped, chipped, and scattered on site to decay (burning would occur only where such debris would create a fire hazard or interfere with transmission line operation and maintenance).

Environmental Consequences of the No Action Alternative

Minor releases of combustion byproducts and fugitive dust associated with maintenance activities for the existing transmission line would continue under the No Action Alternative. No new air quality impacts would be expected.